

Commonwealth of Virginia State Assembly Science & Technology Committee

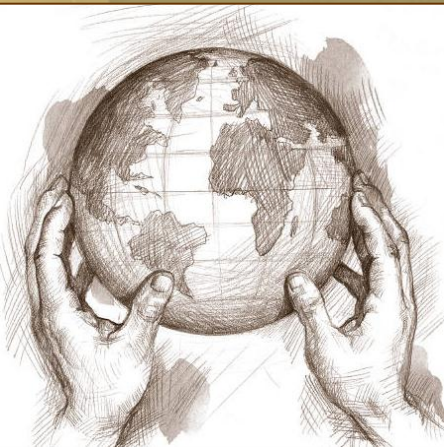
Presentation By:

**SUSTAINABLE EARTH PARTNERS, LLC
&
ARCON DEVELOPMENT US LLC**

Forging a Strategic Alliance

November 7, 2012

**Turning Waste into
Energy**



INEOS BioEnergy, LLC – Waste to Energy

Indian River County, Florida



MECHANICALLY COMPLETE – AUGUST, 2012.

INEOS BioEnergy, LLC – Waste to Energy

Indian River County, Florida



FOR IMMEDIATE RELEASE

INEOS Bio Facility in Florida Begins Producing Renewable Power

BioEnergy Center is expected to produce enough electricity to power the facility and up to 1,400 homes in the local community

Vero Beach, Fla. – October 31, 2012 – Today INEOS Bio announced that its joint-venture project, INEOS New Planet BioEnergy (INPB), has reached another milestone and is now producing renewable power using INEOS Bio's feedstock flexible BioEnergy technology. The facility is producing renewable power for the facility and for export to the local community. At full production, the Center is expected to produce 8 million gallons of advanced cellulosic bioethanol and six megawatts (gross) of renewable power using renewable biomass including yard, vegetative, and agricultural wastes.

ARCON GTL Technology –

Key Process Advantages



- ARCON's Role:

1. Exclusive rights outside of Russia
2. Exclusive rights granted for a minimum of 15 years
3. All plants constructed will have rights for life of plant

- Extraordinary Profit Metrics:

1. CapEx for 16,000,000 gallon / year plant = \$15 mm
2. Can make diesel, gasoline or Jet-A
3. Fuel finished price - $< \frac{1}{2}$ of the current price / gallon

- Syngas is Transformed:

1. NatGas can be reformed to syngas
2. Syngas can be delivered directly to the system
3. Same hardware, different catalyst, different fuel

- Other Technologies to Come:

1. Jet-A can be formed – SEP has begun ASTM certification
2. By-products can be used as chemical intermediaries
3. ARCON will have access to all other technologies

ARCON GTL/CTL/WTE Technology–

Key Site Requirements



- Site Footprint Requirements:

1. For 16 MM gallon / year GTL plant = ½ acre
2. For 16 MM gallon / year CTL or WTE plant = 5 acres

- Site Feedstock Requirements:

1. For 16 MM gallon / year GTL plant:
 - a. Natural gas line
2. For 16 MM gallon / year CTL or WTE plant:
 - a. Natural gas line
 - b. Access to MSW, C&D, tires, rail ties & other feedstock
 - c. Coal and/or waste coal

- Initial List of Potential Virginia Sites:

1. Hampton Roads
2. Northern Virginia (Fairfax County)
3. Richmond
4. Roanoke Valley/Lynchburg
4. Abingdon/Bristol
5. Charlottesville/Staunton Region

ARCON GTL Technology – Plant Picture



Confidential & Business Proprietary



ARCON GTL Technology –

Existing Plant Pictures



TOMSK, SIBERIA RF 44.1 MM GALLONS/YEAR



SARATOV REGION, RF 28.4 MM GALLONS/YEAR



KRASNODAR REGION, RF 47.3 MM GALLONS/YEAR



POLAND CAPACITY 28.4 MM GALLONS/YEAR

URS Independent Engineering Validation –

Summary Findings



“OUR SENIOR PROCESS ENGINEERING STAFF HAS REVIEWED THESE MATERIALS WITH THE FOLLOWING PRELIMINARY CONCLUSIONS:

- THE PROCESS IS CLEAR AND UNDERSTANDABLE AND OPERATES WITHIN THE CURRENT LIMITS OF RECOGNIZED CHEMISTRY**
- IT APPEARS PRACTICAL FOR PRODUCTION OF ‘DROP IN’ FUELS**
- THE MASS AND ENERGY BALANCE ARE ALSO CLEAR AND UNDERSTANDABLE AND, FROM A PROCESS PERSPECTIVE, SHOULD LEAD TO THE PRODUCTION OF THE LIQUID FUEL AND POWER OUTPUTS SUGGESTED**
- THE EMISSION PROFILE PRESENTED IS WITHIN U.S. EMISSION PERMITTING RANGES”**

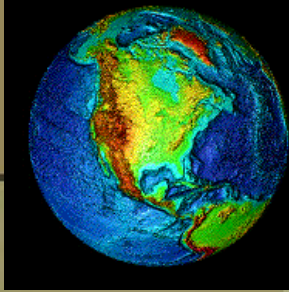
**W. L. ‘TEX’ CARTER
GROUP VICE PRESIDENT
OIL, GAS AND CHEMICALS**

Process for Identifying Site –

Integrated BioEnergy Complex



- **Community Demographic/Infrastructure Criteria:**
 - Size of Community - > 500,000 residents (if possible)
 - Waste Stream - > 500,000 tons/year
 - Fuel Terminal/Distribution – Facility within 20 miles
 - Rail & Navigable Water Access
- **Political Environment:**
 - Supportive City/County/State Governance
 - History of Incentives/Bond Issue Support
 - Strong Conservation Ethic
- **Site Infrastructure:**
 - Natural Gas on/to Site
 - Rail on Site or Available Nearby
 - Abundant Availability of Water
 - Easily Accessible by Road
 - Grid Access Nearby



**Commonwealth of Virginia
&
ARCON Development US LLC**

**Building an Energy Leader
in the Mid-Atlantic Region**

For a Global Community

**Ray Crabbs, Co-Chair & President
ARCON DEVELOPMENT US LLC**

(202) 253-5953 – Cell

E-Mail: vsnasoc@aol.com

www.USARCON.com

